

WHAT IS CLAIMED IS:

1. A method of noise estimation, comprising the steps of:
 - storing a series of incoming symbols received over a wireless link;
 - decoding said series of incoming symbols to produce a series of corresponding bits;
 - encoding said series of corresponding bits to produce a series of recovered symbols;
 - determining a vector product of said series of incoming symbols and said series of recovered symbols;
 - determining a difference between two symbols within said vector product, wherein said two symbols were transmitted over said wireless link in close temporal proximity to one another; and
 - determining an expected value of said difference between said two symbols so as to define an expected value of a non-orthogonal noise portion of said series of incoming symbols.
2. The method of Claim 1, further comprising the step of arranging said series of recovered symbols in an order corresponding to the order in which said series of incoming symbols were transmitted over said wireless link.
3. The method of Claim 1, further comprising the step of determining a data rate at which said series of incoming symbols were transmitted over said wireless link.
4. The method of Claim 1, further comprising the step of determining a signal quality of said series of incoming symbols based upon said expected value of said non-orthogonal noise portion.
5. The method of Claim 1, further comprising the step of requesting an increase or decrease in transmission power based upon said expected value of said non-orthogonal noise portion.
6. A receiver, comprising:
 - means for storing a series of incoming symbols received over a wireless link;
 - means for decoding said series of incoming symbols to produce a series of

4 corresponding bits;

6 means for encoding said series of corresponding bits to determine a series of
6 recovered symbols;

8 means for determining a vector product of said series of incoming symbols and said
8 series of recovered symbols;

10 means for determining a difference between two symbols within said vector product,
10 wherein said two symbols were transmitted over said wireless link in close temporal
proximity to one another; and

12 means for determining an expected value of said difference between said two
12 symbols so as to define an expected value of a non-orthogonal noise portion of said series
14 of incoming symbols.

7. The receiver of Claim 6, further comprising means for arranging said series of
2 recovered symbols in an order corresponding to the order in which said series of incoming
symbols were transmitted over said wireless link.

8. The receiver of Claim 1, further comprising means for determining a data rate at
2 which said series of incoming symbols were transmitted over said wireless link.

9. The receiver of Claim 1, further comprising means for determining a signal
2 quality of said series of incoming symbols based upon said expected value of said non-
orthogonal noise portion.

10. The receiver of Claim 1, further comprising means for requesting an increase or
2 decrease in transmission power based upon said expected value of said non-orthogonal
noise portion.

11. A receiver comprising:

2 a decoder having an input port configured to receive a series of incoming symbols
over a wireless link and having an output port configured to produce a series of recovered
4 data bits;

an encoder having an input port coupled to said output port of said decoder and

6 having an output port configured to produce a series of encoded symbols;

8 a vector product block having a first input port coupled to said output port of said
encoder and having a second input port configured to receive said series of incoming
symbols and having an output port configured to produce a vector product of said series of
10 encoded symbols and said series of incoming symbols;

12 a difference block having an input port coupled to said output port of said vector
product block and having an output port configured to produce differences between sets of
two values of said vector product, wherein said sets of two values correspond to two
14 symbols which were transferred over said wireless link in close temporal proximity to one
another; and

16 a noise estimation block having an input port coupled to said output port of said
difference block and configured to determine a statistical characteristic of said differences.

12. The receiver of Claim 11, further comprising a interleaver coupled between said
2 encoder and said vector product block, said interleaver configured to arrange said series of
recovered symbols are in an order corresponding to the order in which said series of
4 incoming symbols were transmitted over said wireless link.

13. The receiver of Claim 11, further comprising a rate decision block coupled
2 between said decoder and said encoder, said rate decision block configured to determine a
rate at which said series of incoming symbols were transmitted over said wireless link.

14. The receiver of Claim 11, further comprising a signal quality determination unit
2 configured to determine a signal quality of said series of incoming symbols based upon said
statistical characteristic of said differences.

15. The receiver of Claim 1, further comprising a power control block coupled to
2 said noise estimation block, said power control block configured to request an increase or
decrease in transmission power based upon said statistical characteristic of said difference.

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